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THE
ONTARIO WATER RESOURCES
COMMISSION
WATER POLLUTION SURVEY
OF THE
POLICE VILLAGE OF BADEN
TOWNSHIP OF WILMOT

1964

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POLICE VILLAGE OF BADEN - 1964
TOWNSHIP OF WILMOT

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1964

Report on water pollution
survey of the township of
Wilmot, police village of Baden.

80498

R E P O R T

on

WATER POLLUTION SURVEY

of the

TOWNSHIP OF WILMOT

POLICE VILLAGE OF BADEN

Date of Sampling: - September 1964

Division of Sanitary Engineering

R E P O R T

ONTARIO WATER RESOURCES COMMISSION

The purpose of this survey was to review conditions reported in earlier Commission water pollution surveys following inspections on December 7, 1957 and February 19, 1963.

GENERAL

Baden, a police village with a population of 920 is located in the Township of Wilmot approximately ten miles west of Kitchener on Highway 7A. The village is situated at the junction of three creeks which form Baden Creek, a tributary of the Nith River. The creeks receive drainage from the road-side ditches, storm sewers and private drains.

The significant industrial and commercial establishments within Baden are:

Baden Cheese Limited
Master Feeds Limited
Waterloo County Co-op., Farm Supplies

While some of the residents are employed at the above establishments many commute to the neighbouring municipalities of Kitchener and New Hamburg for employment.

WATER USES

Domestic Supplies

There are no municipal or private water supply systems. Water for domestic use is obtained from individual dug or drilled wells.

In a door-to-door sanitary survey in 1963 conducted by the Waterloo County Health Unit, it was reported that there were 166 dug wells and 21 drilled wells within the village.

Recreational and Agricultural Uses

Baden Creek, downstream of the village is used primarily as a source of drinking water for farm animals.

There are no designated swimming areas downstream of the village, but it is reported that the stream supports game fish.

WATER POLLUTION

Existing Conditions

Domestic Waste Disposal

Sewage disposal consists of pit privies or septic tank systems.

In the health unit survey it was reported that there were a total of 109 private waste water outlets that overflow to watercourses. It was estimated that many of these could not be corrected on an individual basis because of insufficient space as well as adverse soil conditions. Reference should be made to the plan of Baden at the back of this report. This map was prepared following the aforementioned sanitary survey and shows the many waste water outlets. It is reported that there has been little or no change.

As a result of the many septic tank and waste water outlets foul conditions prevail in many of the open ditches within the village. Two ditches that were particularly foul were located on Foundry Street

and Carlotta Street.

Industrial Waste Disposal

The only industry with an appreciable amount of waste water is the Baden Cheese Limited. Milk processing wastes from this plant are discharged to a watercourse via the Snyder's Road storm sewer. Whey is picked up by local farmers. No record is kept of the waste water volume.

Pollution of Ground Water

During the health unit survey samples for bacteriological analyses were taken from the individual wells. The sample results are as follows:

Type of Well

<u>No. of Dug</u>	<u>No. of Drilled</u>			
62	12	Grade I	(safe)	39.5%
88	6	Grade II	(doubtful)	50.3%
16	3	Grade III	(unsafe)	10.2%

The belief has been expressed by local authorities that much of the well contamination can be eliminated by repairing, cleaning and disinfecting of the individual wells. It is doubtful that this can be achieved on permanent basis on account of the pollution of the water table by defective septic tank systems. A logical alternative would be the construction of a water supply and distribution system.

PROPOSED SEWAGE WORKS

A preliminary certificate of approval was issued in June 1961 for installation of a sanitary sewerage system at a cost of \$275,700. At a ratepayers meeting in January 1962, it was decided to hold a plebiscite on the question of proceeding with the project. The results were negative. A ratepayers meeting in September 1963 expressed a renewed interest in the project and the village trustees proposed to approach the township council to request the OWRC to reinstate the sewage works programme as a project. To date, no request to reinstate the project has been received.

DISCUSSION OF SAMPLE ANALYSES

The laboratory results of bacteriological examinations and chemical analyses of samples collected on December 14, 1962 and September 17, 1964 are included in Table I which is appended to this report. The examinations and analyses were performed at the OWRC Laboratory in Toronto.

Reference should be made to the plan of Baden included with this report for the location of the sampling points.

Interpretation of Analyses

Bacteriological Examination

The membrane filter coliform count indicates contamination by human or animal excrement. A membrane filter (MF) count of not more than 2,400 organisms per 100 millilitres is considered desirable

in streams.

Biochemical Oxygen Demand (BOD)

The BOD indicates the amount of oxygen required for stabilization of decomposable organic matter in the water. The Commission's objective for stream water quality is an upper limit of four ppm. Waste discharge concentrations to a watercourse should not exceed 15 ppm for 5-Day BOD and suspended solids respectively.

SUMMARY OF RESULTS

Four of the five storm sewer effluents sampled exhibited excessive amounts of contamination. The coliform counts ranged from 25,100 to 580,000,000 per 100 ml. These results are indicative of domestic sewage.

Baden Creek downstream of the village exhibited pollution by coliform organisms that exceeded the objective, in addition to an increased BOD.

SUMMARY AND CONCLUSIONS

Sample results exhibit the fact that contaminated waste water is being discharged to Baden Creek. An effective solution would be to proceed with the proposed sewerage system as many of the problems cannot be corrected on an individual basis owing to lack of available space as well as adverse soil conditions.

The Commission is interested in both water supply and sewage treatment. As a well sampling survey indicated that only 39.5% of the

water supply systems in use are satisfactory the village should consider the construction of a municipal water works system.

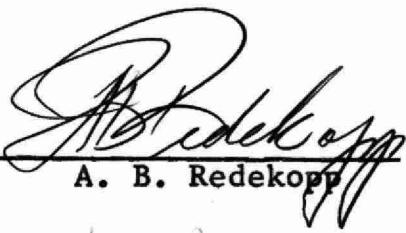
RECOMMENDATIONS

The Township of Wilmot should consider:

1. The construction of a municipal water works system.
2. The installation of sanitary sewers and treatment works.

All of which is respectfully submitted

District Engineer


A. B. Redekopp

Approved by

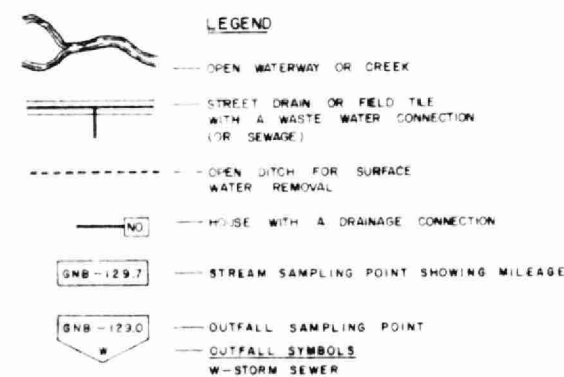

K. H. Sharpe, Director

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TABLE I
ANALYSES OF SAMPLES

<u>Sampling Pt. No.</u>	<u>Location & Description</u>	<u>Date</u>	<u>5-Day BOD</u>	<u>Total Solids</u>	<u>Susp. Solids</u>	<u>M.F. Coliform Count/100 ml</u>
GNB 129.7	Baden Cr. at Brubacher St.	Dec.14/62	2	330	4	5,400
		Sept.17/64	1	330	30	19,000
GNB 129.7W	Snyder's Rd. storm sewer	Dec.14/62	440	750	151	1,530,000
		Sept.17/64		NO FLOW		
GNBN129.7	North creek 15 ft. upstream of storm sewer outfall	Sept.17/64	0.5	278	10	470
GNBN129.7W	Storm sewer outfall at R.R. tracks & Snyder's Rd.	Dec.14/62	26	1070	28	165,000
		Sept.17/64	305	1854	160	50,000,000
GNB 128.8W	Storm sewer discharge at Charles St. on Master Feeds property	Dec.14/62	70	1274	123	6,000,000
		Sept.17/64	380	1622	558	580,000,000
GNB 129.1W	Louisa St. storm sewer dis- charge to side creek	Dec.14/62	6.8	406	12	25,100
		Sept.17/64	2.4	300	11	97,000
GNB 129.0W	Foundry St. storm sewer dis- charge at William St.	Dec.14/62	100	950	300	2,700,000
		Sept.17/64	1000	2118	938	410,000,000
GNB 128.8	Baden Cr. at Hwy.8	Dec.14/62	4.2	346	24	27,000
		Sept.17/64	1.4	300	17	7,000
GNBN 129.6	North creek downstream of Snyder's Rd.	Dec.14/62	9.8	510	211	171,000
	Ditch near Carlotta St.	Dec.14/62	440	3676	2960	22,000,000

All analyses except pH reported in ppm unless otherwise indicated



ONTARIO WATER RESOURCES COMMISSION	
TOWNSHIP OF WILMOT POLICE VILLAGE OF BADEN WATER POLLUTION SURVEY 1964	
SCALE: NOT TO SCALE	
DRAWN BY: O. F.	DATE: JUNE 20/63
CHECKED BY:	DRAWING NO.: 63-181

